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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/657,506	09/08/2000	Hyeon-ho Son	3430-0134P	3076

7590 12/16/2003

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EXAMINER

PARKER, KENNETH

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 12/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

09/657,506

Applicant(s)

SON ET AL

Examiner

Kenneth A Parker

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/2/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 3, 7, 11 and 15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-6, 8-10, 12-14 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

- 1. Claims 1, 5, 9 and 13, 4, 8, 12, 16 rejected under 35 U.S.C. 102(e) as being anticipated by Kameyama et al. (U.S. 6,088,079).**

As to claim 1, Kameyama discloses a liquid crystal device comprising a cholesteric liquid crystal layer disposed over the backlight. Note in figure 8, the light source 42, light conductive plate 4, reflector 41, and cholesteric liquid crystal layer 1. The layer will collimate light. As to claim 5, figure 8 of Kameyama shows a prism array layer 5 arranged between cholesteric liquid crystal layer 1 and the front surface of light conductive plate 4.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 2. Claim 2, 6, 10 and 14 rejected under 35 U.S.C. 103(a) as being unpatentable over Kameyama et al. as applied above and in further view of Li et al. (U.S. 5,691,789).**

Kameyama teaches that the cholesteric liquid crystal layer exhibits circular dichroism by which natural light is separated into reflected light comprising circularly

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polarized light and transmitted light. Kameyama teaches that a single-layer or multi-layer structure can be used for the cholesteric liquid crystal layer. Kameyama does not explicitly teach a single cholesteric liquid crystal layer reflecting either left-handed or right-handed circularly polarized light.

Li discloses a single-layer reflective broadband circular polarizer that reflects either left-handed or right-handed circularly polarized light. Non-linear variation in the pitch of the cholesteric liquid crystal material creates a broadband polarizer having bandwidths approaching 2000 nm. Li teaches that the disclosed single-layer polarizers exhibit improved spectral and band-pass position characteristics. See column 2, lines 36 – 62. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to use the cholesteric liquid crystal polarizer of Li in the device of Kameyama because of its improved spectral and band-pass position characteristics.

Election/Restrictions

Applicant's election with traverse of group I is acknowledged. The traversal is on the ground(s) that there is no burden. This is not found persuasive because the dual layer functions as a color filter and needs to be searched in the color filter subclass and the single layer functions as a polarizer, and needs to be searched in the polarizer subclass.

The requirement is still deemed proper and is therefore made FINAL.

Claims 3,7,11,15 are withdrawn from consideration as directed to a non-elected embodiment.

Response to Arguments

Applicant's arguments filed have been fully considered but they are not persuasive. Applicant's arguments are unclear as to what they are stating is missing from the reference. Applicant argues the reference doesn't show the cholesterics on the surface of the light guide, but figure 7 clearly does. Further, applicant's argument that the language surface requires a layer directly on is contradicted by dependent claims which state that the prism sheet is on the surface. If the prism sheet and the cholesteric are both on the surface, then they must be side by side as viewed from the top, which they are not shown in any embodiment. Applicant on page 11 states that the devices of the Li reference show a cholesteric layer that reflects one handedness, but then goes on to say that it actually reflects both handedness (which is impossible- to reflect both handedness would be to not be a circular polarizer. Cholesterics reflect the handedness opposite to their pitch, and transmit the other).

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

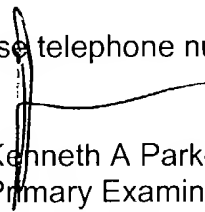
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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth A Parker whose telephone number is 703-305-6202. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.



Kenneth A Parker
Primary Examiner
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November 30, 2003